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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,383	10/17/2003	Ie-Hong Lin	020292	2247

23696 7590 10/05/2005

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EXAMINER	
MILLER, BRANDON J	
ART UNIT	**PAPER NUMBER**
2683	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/688,383	Applicant(s) LIN, IE-HONG	
	Examiner Brandon J. Miller	Art Unit 2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 5-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn in view of Koorapaty and Naghian.

Regarding claim 1 Dunn teaches a method for identifying transmitters in a wireless communication system (see col. 2, lines 42-46). Dunn teaches obtaining a plurality of received signals for a plurality of transmitters (see col. 2, lines 45-48). Dunn teaches determining a transmitter for each received signal by determining a group of transmitters for the received signal (see col. 2, lines 56-60 and col. 5, lines 41-44). Dunn teaches identifying the transmitter for the received signal based on measured power for the received signal (see col. 2, lines 42-51). Dunn does not specifically teach obtaining a predicted power for each candidate transmitter and identifying the transmitter based on predicted powers and measured power. Koorapaty teaches obtaining predicted received signal strength values for each transmitter (see abstract and paragraph [0010]). Koorapaty teaches identifying a transmitter based on predicted received signal strength values and measured received signal strength values (see paragraphs [0010] & [0011]). Naghian teaches selection of an identifier based on measurements made to determine the signal power or strength between base stations and a typical mobile terminal (see paragraphs [0052] & [0053]). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to make the identifying step in Dunn adapt to include a predicted power for each candidate transmitter because the signal strength measurements in Dunn can be predicted and this would allow for an improved technique for determining approximate locations of mobile units in emergency situations.

Regarding claim 2 Dunn and Koorapaty teach a device as recited in claim 1 except for comparing the predicted power for each candidate transmitter against the measured power for the received signal, and wherein the identified transmitter for the received signal is the candidate transmitter with predicted power closest to the measured power. Koorapaty does teach comparing the predicted received signal strength values for each transmitter against the measured received signal strength values for the received signal and wherein the identified transmitter for the received signal is determined based on the difference between the predicted received signal strength values and measured received signal strength values (see paragraph [0011]). Naghian does teach selection of an identifier based on measurements made to determine the signal power or strength between base stations and a typical mobile terminal (see paragraphs [0052] & [0053]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include comparing the predicted power for each candidate transmitter against the measured power for the received signal, and wherein the identified transmitter for the received signal is the candidate transmitter with predicted power closest to the measured power because this would allow for an improved technique for determining locations of mobile units with greater accuracy.

Regarding claim 3 Dunn and Koorapaty teach a device as recited in claim 1 except for determining a coverage zone to use for the received signal, and wherein the predicted power for

each candidate transmitter is obtained based on the coverage zone. Dunn does teach determining a coverage zone to use for the received signal (see col. 2, lines 56-60). Dunn does teach the power for each transmitter is obtained based on the coverage zone (see col. 7, lines 10-14). Koorapaty does teach predicted received signal strength values for each transmitter (see paragraph [0010]). Naghian does teach selection of an identifier based on measurements made to determine the signal power or strength between base stations and a typical mobile terminal (see paragraphs [0052] & [0053]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include determining a coverage zone to use for the received signal, and wherein the predicted power for each candidate transmitter is obtained based on the coverage zone because this would allow for an improved technique for determining locations of mobile units with greater accuracy.

Regarding claim 5 Dunn teaches the coverage zone is derived based on one or more coverage areas of one or more identified transmitters (see col. 2, lines 56-60 and col. 7, lines 10-14).

Regarding claim 6 Dunn, Koorapaty, and Naghian teach a device as recited in claim 1 except for predicted power for each candidate transmitter that is determined based on a path loss prediction model. Naghian does teach a path loss prediction model (see paragraph [0120]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include predicted power for each candidate transmitter that is determined based on a path loss prediction model because this would allow for an improved technique for locating mobile units by communicating signal strength measurements.

Regarding claim 7 Naghian teaches a path loss prediction model that is based on Okumura-Hata model (see paragraphs [0119] & [0120]).

Regarding claim 8 Koorapaty teaches the predicted received signal strength values for each transmitter is determined based on field data (see paragraph [0010]).

Regarding claim 9 Naghian teaches a wireless communication system that is a CDMA system (see paragraph [0119]).

Regarding claim 10 Dunn, Koorapaty, and Naghian teach a device as recited in claim 9 except for a list of base station transceivers (BTSs) with same PN offset. Naghian does teach a base station transceiver (BTS) (see paragraph [0030]). Naghian does teach a base station that measures timing offset (see paragraph [0117]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include a list of base station transceivers (BTSs) with same PN offset because this would allow for an improved technique for locating mobile units in a wireless CDMA communication system.

Regarding claim 11 Dunn, Koorapaty, and Naghian teach a device as recited in claim 1 except for obtaining predicted propagation delay for each candidate transmitter in the list, and wherein the transmitter for the received signal is further identified based on predicted propagation delays for the candidate transmitter and measured propagation delay for the received signal. Dunn does teach determining the transmitter for each received signal (see col. 2, lines 42-48). Koorapaty does teach obtaining predicted values for each transmitter, and wherein the transmitter for the received signal is further identified based on predicted values for the transmitter and measured values for the received signal (see paragraphs [0010] & [0011]). Naghian does teach delays in a network response (see paragraph [0020]). It would have been

obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include obtaining predicted propagation delay for each candidate transmitter in the list, and wherein the transmitter for the received signal is further identified based on predicted propagation delays for the candidate transmitter and measured propagation delay for the received signal because this would allow for an improved technique for locating mobile units by communicating signal strength measurements.

Regarding claim 12 Dunn teaches determining the transmitter for each received signal (see col. 2, lines 42-48). Dunn does not specifically teach determining a power delta for each candidate transmitter as a difference between the predicted power for the candidate transmitter and the measured power of the received signal, determining a propagation delay delta for each candidate transmitter as a difference between the predicted propagation delay for the candidate transmitter and the measured propagation delay for the received signal, and obtaining a weighted sum of the power delta and the propagation delay delta for each candidate transmitter, and wherein the identified transmitter for the received signal is the candidate transmitter with a smallest weighted sum. Koorapaty teaches determining the difference between the predicted received signal strength values for the transmitter and the measured received signal strength values of the received signal (see paragraphs [0010] & [0011]). Koorapaty teaches determining the difference between predicted values for the transmitter and the measured values for the received signal (see paragraphs [0010] & [0011]). Koorapaty teaches obtaining a weighted sum (see paragraph [0027]). Naghian teaches selection of an identifier based on measurements made to determine the signal power or strength between base stations and a typical mobile terminal (see paragraphs [0052] & [0053]). Naghian teaches delays in a network response and a delta

function (see paragraphs [0020] & [0109]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include determining a power delta for each candidate transmitter as a difference between the predicted power for the candidate transmitter and the measured power of the received signal, determining a propagation delay delta for each candidate transmitter as a difference between the predicted propagation delay for the candidate transmitter and the measured propagation delay for the received signal, and obtaining a weighted sum of the power delta and the propagation delay delta for each candidate transmitter, and wherein the identified transmitter for the received signal is the candidate transmitter with a smallest weighted sum because this would allow for an improved technique for locating mobile units by communicating signal strength measurements.

Regarding claim 13 Dunn teaches a method for determining transmitters in a wireless communication system (see col. 2, lines 42-46). Dunn teaches obtaining a plurality of received signals for a plurality of transmitters (see col. 2, lines 45-48). Dunn teaches determining a transmitter for each received signal by determining a group of transmitters for the received signal (see col. 2, lines 56-60 and col. 5, lines 41-44). Dunn teaches determining the transmitters for the received signal based on measured power for the received signal and measured power for the identified transmitter (see col. 2, lines 42-51). Dunn does not specifically teach obtaining a predicted power for each candidate transmitter, obtaining a predicted power for an identified transmitter, and determining the transmitter based on predicted powers for the candidate transmitters, the predicted power for the identified transmitter, measured power of the received signal, and measured power for the identified transmitter. Koorapaty teaches obtaining predicted received signal strength values for a transmitter (see abstract and paragraph [0010]). Koorapaty

teaches determining a transmitter based on predicted received signal strength values and measured received signal strength values (see paragraphs [0010] & [0011]). Naghian teaches selection of an identifier based on measurements made to determine the signal power or strength between base stations and a typical mobile terminal (see paragraphs [0052] & [0053]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the identifying step in Dunn adapt to include a predicted power for each candidate transmitter and identified transmitter, and determining the transmitter based on predicted powers for the candidate transmitters, predicted powers for the identified transmitter, measured power of the received signal, and measured power for the identified transmitter because the signal strength measurements in Dunn can be predicted and this would allow for an improved technique for determining approximate locations of mobile units in emergency situations.

Regarding claim 14 Dunn teaches determining the transmitter for each received signal (see col. 2, lines 42-48). Dunn does not specifically teach comparing a relative predicted power for each candidate transmitter against a relative measured power for the received signal, the relative predicted power being a difference between the predicted power for the candidate transmitter and the predicted power for the identified transmitter, the relative measured power being a difference between the measured power of the received signal and the measured power for the identified transmitter, and wherein the identified transmitter for each received signal is the candidate transmitter with relative predicted power closest to the relative measured power. Koorapaty teaches comparing predicted received signal strength values for each transmitter against a measured received signal strength values for the received signal (see paragraph [0011]). Koorapaty teaches a difference between the predicted received signal strength values for the

transmitter and the predicted received signal strength values for the identified transmitter (see paragraphs [0010] & [0011]). Koorapaty teaches measured received signal strength values being a difference between the measured received signal strength values of the received signal and the measured received signal strength values for the identified transmitter (see paragraphs [0010] & [0011]). Koorapaty teaches the identified transmitter is the transmitter with a difference between predicted received signal strength values and measured received signal strength values that are within a threshold (see paragraphs [0012] & [0013]). Naghian teaches selection of an identifier based on measurements made to determine the signal power or strength between base stations and a typical mobile terminal (see paragraphs [0052] & [0053]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include comparing a relative predicted power for each candidate transmitter against a relative measured power for the received signal, the relative predicted power being a difference between the predicted power for the candidate transmitter and the predicted power for the identified transmitter, the relative measured power being a difference between the measured power of the received signal and the measured power for the identified transmitter, and wherein the identified transmitter for each received signal is the candidate transmitter with relative predicted power closest to the relative measured power because this would allow for an improved technique for determining approximate locations of mobile units in emergency situations.

Regarding claim 15 Dunn and Koorapaty teach a device as recited in claim 3 and is rejected given the same reasoning as above.

Regarding claim 16 Dunn, Koorapaty, and Naghian teach a device as recited in claim 9 and is rejected given the same reasoning as above.

Regarding claim 17 Dunn, Koorapaty, and Naghian teach a device as recited in claim 13 except for obtaining predicted propagation delay for each candidate transmitter in the list, obtaining predicted propagation delay for the identified transmitter, and wherein the transmitter for the received signal is further identified based on predicted propagation delays for the candidate transmitter, the predicted propagation delay for the identified transmitter, measured propagation delay for the received signal, and measured propagation delay for the identified transmitter. Dunn does teach determining the transmitter for each received signal (see col. 2, lines 42-48). Koorapaty does teach obtaining predicted values for each transmitter, and wherein the transmitter for the received signal is further identified based on predicted values for the transmitter and measured values for the received signal (see paragraphs [0010] & [0011]). Naghian does teach delays in a network response (see paragraph [0020]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include obtaining predicted propagation delay for each candidate transmitter in the list, obtaining predicted propagation delay for the identified transmitter, and wherein the transmitter for the received signal is further identified based on predicted propagation delays for the candidate transmitter, the predicted propagation delay for the identified transmitter, measured propagation delay for the received signal, and measured propagation delay for the identified transmitter because this would allow for an improved technique for locating mobile units by communicating signal strength measurements.

Regarding claim 18 Dunn teaches determining the transmitter for each received signal (see col. 2, lines 42-48). Dunn teaches determining a power for each transmitter (see col. 2, lines 42-47). Dunn does not specifically teach determining a relative power delta for each candidate

transmitter, determining a relative propagation delay delta for each candidate transmitter, and obtaining a weighted sum of the relative power delta and the relative propagation delay delta for each candidate transmitter, and wherein the identified transmitter for the received signal is the candidate transmitter with a smallest weighted sum. Koorapaty teaches determining the difference between predicted values for the transmitter and the measured values for the received signal (see paragraphs [0010] & [0011]). Koorapaty teaches obtaining a weighted sum (see paragraph [0027]). Naghian does teach delays in a network response and a delta function (see paragraphs [0020] & [0109]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include determining a relative power delta for each candidate transmitter, determining a relative propagation delay delta for each candidate transmitter, and obtaining a weighted sum of the relative power delta and the relative propagation delay delta for each candidate transmitter, and wherein the identified transmitter for the received signal is the candidate transmitter with a smallest weighted sum because this would allow for an improved technique for locating mobile units by communicating signal strength measurements

Regarding claim 19 Dunn teaches an apparatus operable to identify transmitters in a wireless communication system (see col. 2, lines 42-46). Dunn teaches obtaining a plurality of received signals for a plurality of transmitters (see col. 2, lines 45-48). Dunn teaches determining a plurality of groups of transmitters for the plurality of received signals, one group for each received signal (see col. 2, lines 56-60 and col. 5, lines 41-48). Dunn teaches identifying the transmitter for the received signal based on measured power for the received signal (see col. 2, lines 42-51). Dunn does not specifically teach obtaining a predicted power for

each candidate transmitter and identifying the transmitter based on predicted powers and measured power. Koorapaty teaches obtaining predicted received signal strength values for a transmitter (see abstract and paragraph [0010]). Koorapaty teaches identifying a transmitter based on predicted received signal strength values and measured received signal strength values (see paragraphs [0010] & [0011]). Naghian teaches selection of an identifier based on measurements made to determine the signal power or strength between base stations and a typical mobile terminal (see paragraphs [0052] & [0053]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the identifying step in Dunn adapt to include a predicted power for each candidate transmitter because signal strength measurements in Dunn can be predicted and this would allow for an improved technique for determining approximate locations of mobile units in emergency situations.

Regarding claim 20 Dunn and Koorapaty teach a device as recited in claim 3 and is rejected given the same reasoning as above.

Regarding claim 21 Dunn, Koorapaty, and Naghian teach a device as recited in claim 6 and is rejected given the same reasoning as above.

Regarding claim 22 Dunn, Koorapaty, and Naghian teach a device as recited in claim 7 and is rejected given the same reasoning as above.

Regarding claim 23 Naghian teaches means information used for the path loss prediction model (see paragraphs [0120]). Koorapaty teaches storing information (see paragraph [0010]).

Regarding claim 24 Dunn teaches obtaining measured power for an identified transmitter for each received signal (see col. 2, lines 42-51). Dunn does not specifically teach obtaining predicted power or wherein the transmitter for each received signal is further identified based on

the predicted power for the identified transmitter for the received signal. Koorapaty teaches obtaining predicted received signal strength values and a transmitter for a received signal is identified based on the predicted received signal strength values (see paragraph [0010] & [0011]). Naghian teaches selection of an identifier based on measurements made to determine the signal power or strength between base stations and a typical mobile terminal (see paragraphs [0052] & [0053]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include obtaining predicted power or wherein the transmitter for each received signal is further identified based on the predicted power for the identified transmitter for the received signal because this would allow for an improved technique for determining approximate locations of mobile units in emergency situations.

Regarding claim 25 Dunn, Koorapaty, and Naghian teach a device as recited in claim 11 and is rejected given the same reasoning as above.

Regarding claim 26 Dunn, Koorapaty, and Naghian teach a device as recited in claim 9 and is rejected given the same reasoning as above.

Regarding claim 27 Dunn teaches identifying transmitters in a wireless communication system (see col. 2, lines 42-46). Dunn teaches obtaining a plurality of received signals for a plurality of transmitters (see col. 2, lines 45-48). Dunn teaches determining a plurality of groups of transmitters for the plurality of received signals, one group for each received signal (see col. 2, lines 56-60 and col. 5, lines 41-48). Dunn teaches identifying the transmitter for the received signal based on measured power for the received signal (see col. 2, lines 42-51). Dunn teaches a computer program product and a computer-usable medium for storing codes (see abstract and col. 4, lines 62-65). Dunn does not specifically teach obtaining a predicted power for each

candidate transmitter and identifying the transmitter based on predicted powers and measured power. Koorapaty teaches obtaining predicted received signal strength values for a transmitter (see abstract and paragraph [0010]). Koorapaty teaches identifying a transmitter based on predicted received signal strength values and measured received signal strength values (see paragraphs [0010] & [0011]). Naghian teaches selection of an identifier based on measurements made to determine the signal power or strength between base stations and a typical mobile terminal (see paragraphs [0052] & [0053]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the identifying step in Dunn adapt to include a predicted power for each candidate transmitter because signal strength measurements in Dunn can be predicted and this would allow for an improved technique for determining approximate locations of mobile units in emergency situations.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn in view of Koorapaty, Naghian and Remy.

Regarding claim 4 Dunn, Koorapaty, and Naghian teach a device as recited in claim 3 except for predicted power for each transmitter that is obtained for a centroid of the coverage zone. Koorapaty does teach predicted power for a transmitter (see paragraph [0010]). Remy teaches a centroid of the coverage zone (see paragraph [0022]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include predicted power for each transmitter that is obtained for a centroid of the coverage zone because this would allow for an improved technique for determining locations of mobile units with greater accuracy.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kennedy, Jr. U.S Patent No. 6,871,077 B2 discloses a system and method for geolocating a wireless mobile unit from a single base station using repeatable ambiguous measurements.

Ravi et al. U.S. Patent No. 6,560,462 B1 discloses a system and method for determining the location of a mobile station in a wireless network.

Ogino et al. U.S. Patent No. 6,865,394 B2 discloses a location detection method, location detection system and location detection program.

Reed et al. U.S. Patent No. 6,161,018 discloses a method and system for estimating a subscriber's location in a wireless communication system service area.

Chang et al. U.S. Patent No. 6,263,208 B1 discloses geolocation estimation method for CDMA terminals based on pilot strength measurements.

Messier et al. U.S. Patent No. 6,246,861 B1 discloses cellular telephone location system.

Hall et al. U.S. Patent No. 6,424,837 B1 discloses automated testing for cellular telephone system including emergency positioning.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon J. Miller whose telephone number is 571-272-7869. The examiner can normally be reached on Mon.-Fri. 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 28, 2005

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